



Name _____ Date _____

Reteaching: For use after Lesson 9.1, Algebra 2 with Trigonometry

Graphing Quadratic Functions

Concept: Graphing quadratic functions of the form $y = ax^2 + c$

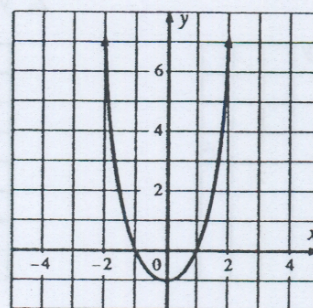
Remember: To graph a quadratic function, make a table of ordered pairs. Then graph the points and connect them with a smooth curve.

Example: Graph $y = 2x^2 - 1$

Make a table of ordered pairs.

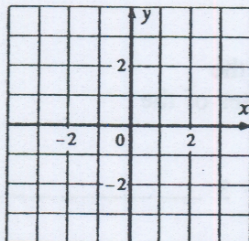
x	-3	-2	-1	0	1	2	3
$2x^2 - 1$	17	7	1	-1	1	7	17

Graph the points and connect them with a smooth curve.

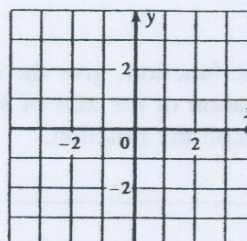


Graph each quadratic function.

1. $y = x^2 - 3$



2. $y = \frac{1}{4}x^2$



Concept: Finding the axis of symmetry and the vertex of a parabola and telling whether the vertex is a maximum or a minimum point

Remember: For a quadratic function of the form $y = ax^2 + c$,

- the axis of symmetry is $x = 0$
- the graph opens upward if $a > 0$ and downward if $a < 0$
- the vertex is c units above the point $(0, 0)$ if $c > 0$ and c units below the point $(0, 0)$ if $c < 0$
- the vertex is a minimum point if $a > 0$ and a maximum point if $a < 0$

Example: Give the equation of the axis of symmetry and the coordinates of the vertex for the quadratic function $y = -x^2 + 4$. Indicate maximum or minimum.

In the standard form for this equation, $a = -1$ and $c = 4$. Therefore, the axis of symmetry is $x = 0$, the graph opens downward, the vertex is at $(0, 4)$, and the vertex is a maximum point.

Without graphing, find axes of symmetry and vertices, and indicate either maximum or minimum.

3. $y = -2x^2 + 1$ _____ 4. $y = 3x^2 - 2$ _____